

SUPPORTING INFORMATION

Stimulation of colonic motility by oral PEG electrolyte bowel preparation assessed by MRI: comparison of split versus single dose

Table S1: Study population demographic data

	Group 1	Group 2	
	Split dose	Single dose	p
Number of subjects (Male/Female)	12 (6M/6F)	12 (6M/6F)	-
Age (years)	27±3	26±2	0.8844
Body Mass Index, BMI (kg/m ²)	22.9±0.8	23.3±0.6	0.6576
Anxiety scores	3.6±0.6	3.4±0.7	0.8616
Depression scores	0.9±0.3	1.6±0.7	0.9755
PHQ-15 score	3.0±0.4	2.0±0.7	0.1014
Perceived stress score	12±2	12±3	0.9631

Table S2: Two-way repeated measures ANOVA for primary and secondary outcomes. The data were Log transformed to achieve normal distribution before ANOVA. Normal distribution of the data was not achieved even after Log transform for the ascending colon motility index, chyme heterogeneity scores and T1, or for the abdominal symptoms on the MRI day. See Table S3 for additional analysis on Area Under the Curve for those outcomes.

	Treatment p	Time p	Interaction p
Small bowel water content	0.0127	<0.0001	<0.0001
Ascending colon volume	0.0099	<0.0001	0.2218
Transverse colon volume	0.2593	0.0001	0.0018
Descending colon volume	0.7080	<0.0001	0.1616
Total colon volume	0.0966	<0.0001	0.0079

Table S3: Area under the curve (AUC) for primary and secondary outcomes

	Split dose	Single dose	p
	AUC4h	AUC4h	
Small bowel water content (mL·h)	1080±144	832±114	0.1881
Ascending colon volume (mL·h)	1034±124	1412±100	0.0274
Transverse colon volume (mL·h)	1088±106	1296±126	0.2244
Descending colon volume (mL·h)	848±101	893±82	0.7307
Total colon volume (mL·h)	2969±295	3601±244	0.1129
Ascending colon motility index (segment·s)	303±40	485±103	0.3418
Ascending colon chyme heterogeneity scores (scores·h)	16.2±0.4	16.3±0.3	0.8139
Ascending colon chyme T1 (ms·h)	11291±625	9778±921	0.1989
Bloating (mm·h)	41±12	51±15	0.7818
Distension (mm·h)	42±13	52±14	0.5586
Abdominal pain/discomfort (mm·h)	53±17	56±16	0.9755
Nausea/sickness (mm·h)	41±12	43±16	0.6220

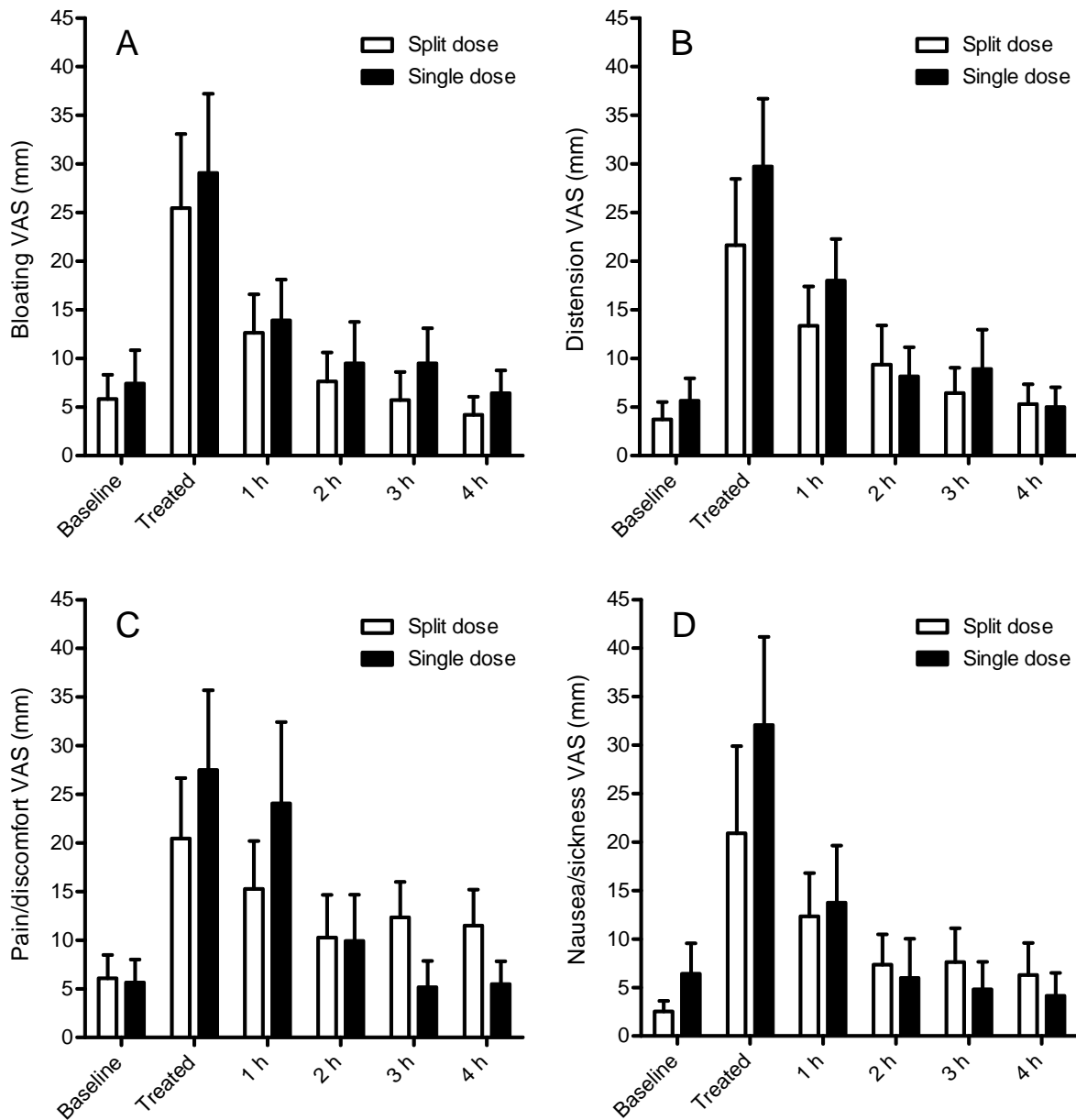


Figure S1: Abdominal symptoms on the study day for the group of 11 healthy volunteers who took the split 2×1 litre dose of PEG electrolyte and the separate group of 12 healthy volunteers who took the single 2 litres dose of PEG electrolyte. (A) Bloating. (B) Distension. (C) Pain/discomfort. (D) Nausea/sickness. Values are mean Visual Analogue Scale scores (in mm) \pm SEM.

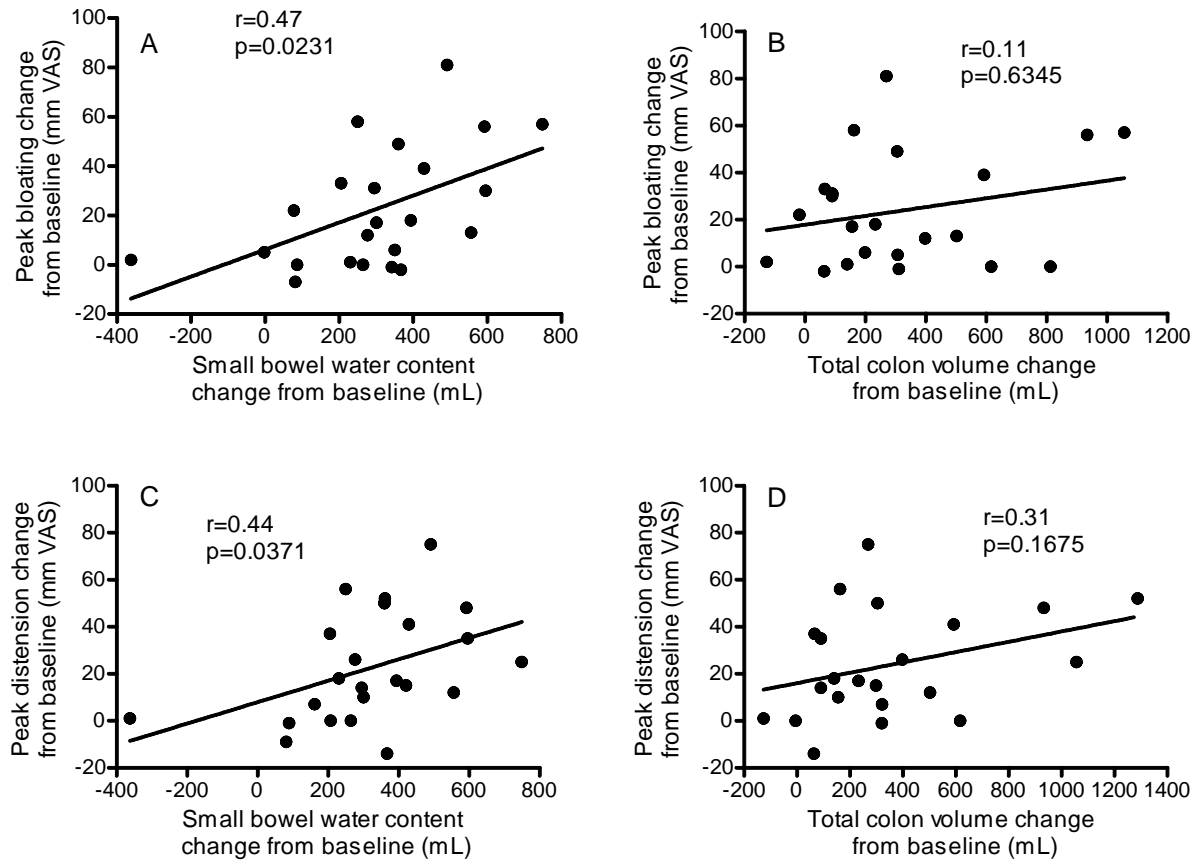


Figure S2: Correlation between symptoms and MRI bowel volumes. Peak change in symptom of bloating from baseline values (visual analogue scales in mm) versus the change from baseline values in (A) small bowel water content and (B) total colon volume (values in mL). The panel also shows the peak change in symptom of distension from baseline values (visual analogue scales in mm) versus the change from baseline values in (C) small bowel water content and (D) total colon volume (values in mL). Data are from both groups of healthy volunteers who took the split 2×1 litre dose or the single 2 litres dose of PEG electrolyte.

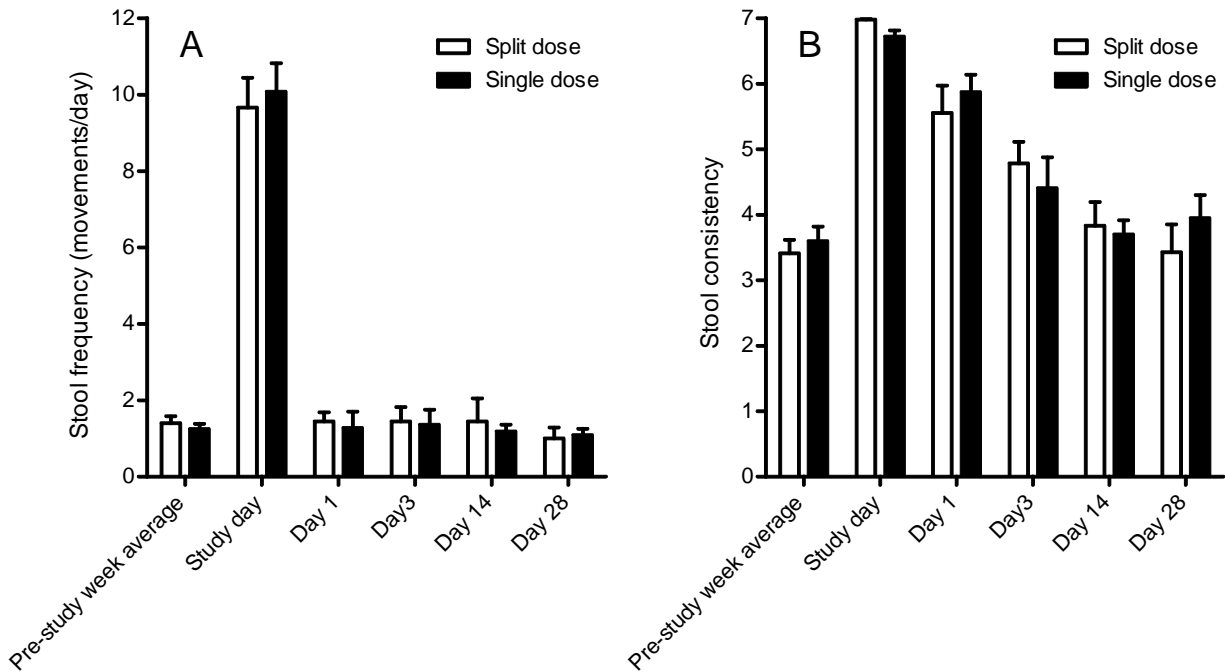


Figure S3: Stool diaries for (A) frequency and (B) consistency for the group of 11 healthy volunteers who took the split 2×1 litre dose of PEG electrolyte and the separate group of 12 healthy volunteers who took the single 2 litres dose of PEG electrolyte. Values are stool diary scores \pm SEM. Pre-study week values were the average of Days -8 to day -1.

MRI MOVIES

Movie M1: A video of a dynamic ‘cine’ MRI motility scan acquired through the ascending colon of a healthy volunteer who drank a 2 litres single dose of PEG electrolyte. The video is taken immediately after the subject finished drinking the solution. The acquisition consists of a single, sagittal slice through the ascending colon acquired every second for 2 minutes. The speed of the movie was increased for visualization purposes, with the image data shown as acquired. Ascending colon contractions can be clearly seen.

Movie M2: A video of a dynamic ‘cine’ MRI motility scan acquired through the ascending colon of a healthy volunteer from Group 1 at fasted morning baseline. The acquisition consists of a single, sagittal slice through the ascending colon acquired every second for 2 minutes. The speed of the movie was increased for visualization purposes, with the image data shown as acquired. In this case there is little colonic segmental motility but a propulsive ‘mass movement’ can be clearly seen.